4/11/2005

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Patent Application: 10/822,271
Filing Date: 4/10/2004
Patent Name: SAFELANDER

United States Patent and Trademark Office
Address: Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

C/O Examiner TUAN C. TO
ART UNIT: 3663

Dear Mr. To,

Per your correspondence to us, mailed 04/07/2005, we have included the following:

a) **A complete 04/11/2005 listing of all of the claims.**
b) **Claims 1-15, 17, 18 and 21-41 are identical to our original submittal (Filing date 4/10/2004) and are the ones that you have allowed. We concur with your findings on these claims.**
c) **Claim 16 was not allowed. We have sent to you on 1/27/05 our justification for having this claim allowed. Hopefully this claim will be allowed as in the original submittal (Filing date 4/10/2004).**
d) **Claims 19 and 20 were not allowed. We have currently amended these two claims per your recommendations from the original submittal (Filing date 4/10/2004) and hopefully in their 4/11/2005 state/present-state (enclosed claims) they will be allowed.**
e) **A 04/11/2005 complete listing of all of the claims showing their current status (Original) or (Currently Amended).**

There have been no additional claims to our original 41-claim submittal on 4/10/2004. Only claims 19 and 20 have been amended to overcome your objections. We sincerely hope that this meets with your approval.

Yours truly,

Leslie Jae Lenell

Leslie Jae Lenell

Seymour Levine

Seymour Levine

WHAT IS CLAIMED

1. **A remote piloting system comprising:**
   a) **an operational aircraft or a plurality of operational aircraft with equipment to interface with a ground-based aircraft simulator.**
   b) **a ground-based aircraft simulator or a plurality of ground-based simulators, that dynamically mimics the displays and controls of operational aircraft (a) as well as having the ability to remotely take over the piloting function of operational aircraft (a).**
   c) **a sensor multiplexer receiver and transmitter means located onboard aircraft (a) for accepting said aircraft performance and control parameters that are required by a ground based simulator to replicate the major control and performance states of aircraft (a), and then, when necessary, convert said performance and control parameters into digital format, add a unique aircraft identification, ID, and configuration label to an outgoing radio frequency, RF, signal and broadcasting said outgoing RF signal to a Central Ground-Based processing Station (CGBS) which then transfers the aircraft performance and control data to a ground-based aircraft simulator (b).**
   d) **a ground-based aircraft simulator digital processor/computer that provides the computational and conversion capability to dynamically reproduce displays in operational aircraft (a) as well to convert the remote piloting controls of the ground-based simulator so that they can be used for conning/guiding of operational aircraft (a).**
   e) **a remote pilot capability that permits a pilot sitting in the ground-based aircraft simulator (b) to control the piloting of an operational aircraft in (a).**
   f) **a ground-based aircraft simulator Flight Control Unit (FCU), and/or any combination of the following:**
      1. **ILS**
      2. **Autopilot/Flight Director (FD)**

3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to a safe landing and stopped by the remote pilot.

g) **a remote pilot electronic interface unit located on aircraft (a) that recognizes that the remote pilot aircraft simulator (b) has uniquely specified and selected it, from a plurality of operational aircraft, based on it recognizing its unique ID, as the vehicle to be remotely piloted.**

h) **a remote pilot electronic interface unit (g) that provides the interfaces to control the aircraft's (a) FCU and/or any combination of the following:**

1. **ILS**
2. **Autopilot/ Flight Director (FD)**
3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to a safe landing and stopped by the remote pilot.

i) **a ground-based aircraft simulator (b) that via ground to air telemetry, directed through the CGBS, with operational aircraft (a) and electronic interfaces (g) and (h) provides the electronic signals that control operational aircraft's (a) FCU and/or any combination of the following:**

1. **ILS**
2. **Autopilot/ Flight Director (FD)**
3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to safe landing at a remote pilot designated airfield and stopped..

j) a unique aircraft identification, ID, and configuration system which permits two-way RF communication between a ground-based aircraft simulator and a specific operational aircraft (a) that is functioning among a plurality of operational aircraft.

k) a parsing system in the CGBS based on aircraft's (a) unique ID (j) that allows information going to the CGBS to be parsed so that aircraft (a) is uniquely identified from a plurality of operational aircraft and utilized in the remote pilot simulator (b).

l) a ground to air and air to ground two-way RF communication system that allows unique communication between specified operational aircraft (a) and a ground-based aircraft simulator (b) based on the unique ID (j) of operational aircraft (a).

2. A remote pilot system, such as in claim 1, in which:

a) a ground-based simulator has voice and /or digital data communication with the air traffic control/management (ATC/M).

3. A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the:

a) **operational aircraft onboard pilot notifies, via telecommunication, the remote pilot located in the ground-based simulator, of the onboard pilot's desire for the remote pilot to assume the piloting function of the operational aircraft.**

b) **the remote pilot located in a ground-based simulator notifies, via telecommunication, the operational aircraft onboard pilot that the remote pilot has taken the piloting function over and that the operational aircraft piloting function is now under the control of the remote pilot.**

c) **remote pilot in the ground-based simulator notifies, via telecommunication, the onboard pilot in the operational aircraft that the piloting function of the operational aircraft will be delegated back to the onboard pilot at a designated time.**

d) **operational aircraft onboard pilot notifies, via telecommunications, the remote pilot in the ground-based simulator of the onboard pilot's desire to assume the piloting function of the operational aircraft.**

4. **A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the operational aircraft onboard pilot using a coded message for a terrorist, notifies via telecommunication, the remote pilot located in the ground-based simulator to immediately assume the piloting function of the operational aircraft.**

5. **A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the operational aircraft onboard pilot using a coded message for a dire aircraft problem, notifies via telecommunication, the remote pilot located in the ground-based simulator to immediately assume the piloting function of the operational aircraft.**

6. **A remote pilot system, such as in claim 1, equipped with a remote pilot display & control advisory system located in the remote pilot simulator in which the:**

a) **operational aircraft onboard pilot notifies the remote pilot in the ground-based simulator , via telecommunication, of the onboard pilot's desire for the remote pilot to assume the piloting function of the operational aircraft.**

b) **remote pilot in the ground-based, via telecommunication, notifies the operational aircraft onboard pilot that the remote pilot has taken the piloting function over and that the operational aircraft piloting is now under the control of the remote pilot.**

c) **remote pilot in the ground-based simulator notifies, via telecommunication, the operational aircraft onboard pilot that the piloting function of the operational aircraft will be delegated back to the onboard pilot at a specified time.**

d) **operational aircraft onboard pilot notifies, via telecommunications, the remote pilot in the ground-based simulator of the onboard pilot's desire to assume the piloting function of the operational aircraft.**

7. **A remote pilot system, such as in claim 1, in which an air traffic control/management (ATC/M), weather, map, terrain, security and airline communication system that allows the remote pilot's simulator to reproduce the communication, data and displays available in the operational aircraft 1.**

8. **A remote pilot system, such as in claim 1, in which the remote pilot in the simulator has the ability to communicate directly via a ground-based digital data link with ATC/M, a weather source, a map source, a terrain source, security, airline and aircraft manufacturer.**

9. **A remote pilot system, such as in claim 1, in which the RF digital two-way (to and from) communication system between the remote pilot and the operational aircraft is a regional digital data link (less than 1000 miles).**

10. **A remote pilot system, such as in claim 1, in which the:**

a) **RF digital two-way (to and from) communication system between the remote pilot and the operational aircraft is a nationwide digital data link.**

b) **communication system (a) with a minimum of a 500 mile extension beyond national borders.**

11. **A remote pilot system, such as in claim 1, in which the:**

a) **RF digital two-way (to/from) communication system between the remote pilot and the operational aircraft is a global digital data link.**

b) **communication system consists of an in atmosphere RF communication, such as via a global satellite data link or ground to aircraft directly, or a combination of atmospheric RF communication and a ground digital data link consisting of optical fiber and wire digital data transmission.**

12. **A remote pilot system, such as in claim 1, in which the ground-based remote pilot simulator for emergency mitigation, development and training purposes interfaces directly with the operational aircraft (a) and/or an air carrier or aircraft manufacturer's simulation capability such that it artificially produces a computer generated aircraft piloting environment**

13. **A remote pilot system, such as in claim 1, in which the ground to air RF communication system allows simultaneous communication of emergency or warning messages from the remote pilot simulator to all operational aircraft.**

14. **A remote pilot system, such as in claim 1, in which both the RF communication and the ground communication are secure and can have either one of, or any combinations of:**

a) **a ciphered communication system that allows for periodically changing the code to be utilized in the communication system.**

b) **an anti-spoof communication system that reasonably prevents data from being misinterpreted..**

c) **an anti-jam communication system that reasonably prevents the data communication from being intentionally jammed or jammed by naturally occurring RF noise/interference signals.**

15. **A remote pilot system, such as in claim 1, supplemented with:**

    a) **a remote pilot simulator that simulates the control of the aircraft's control surfaces (ailerons, flaps, spoilers, rudder, etc.), thrust controls, landing-gear controls, steering, braking controls, etc. so as to permit the remote pilot, via telemetry to the aircraft, to take manual control of the aircraft just as if the remote pilot was the onboard pilot.**

    b) **an operational aircraft interface which includes control surfaces (ailerons, flaps, spoilers, rudder, etc.), thrust controls, landing-gear controls, steering, braking controls, etc., that permits the signals coming from the remote pilot, via telemetry to the aircraft, to be manually controlled by the remote pilot both on the ground for taxiing as well as during flight.**

16. **A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display for adding virtual reality capability to the remote pilot simulator.**

17. **A high fidelity synthetic vision remote pilot simulator windshield display that utilizes digitized map, terrain and elevation – topographic - data and airport data to aid the remote pilot in safely landing the aircraft.**

18. **A high fidelity synthetic vision remote pilot simulator windshield display that superimposes airport ground traffic and/or air traffic on the simulator's windshield display from the local airport's traffic control system's real-time data system.**

19. **A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display supplemented with dynamic representations of surrounding ground and in air vehicles that are superimposed on the display based on ATC/M supplied digital data such that it permits the remote pilot in the simulator to reasonably see the aircraft's environment similar to the onboard pilot in the actual aircraft which is/will-be remotely controlled.**

20. **A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display supplemented with dynamic representations**

of surrounding ground and in-air vehicles that are superimposed on the display based on topographic and airport digital data, from a data base, such that the remote pilot in the simulator sees the aircraft environment similar to the pilot in the actual aircraft which is/will-be remotely controlled.

21. High fidelity synthetic vision remote pilot virtual reality goggles/glasses that superimpose the ATC/M supplied digital data such that the remote pilot reasonably sees the aircraft environment similar to the onboard pilot in the actual aircraft which is/will-be remotely controlled.

22. High fidelity synthetic vision remote pilot virtual reality goggles/glasses that superimposes topographic and airport digital data, from a digital data base, such that the remote pilot in the simulator sees the aircraft environment similar to the pilot residing in the actual aircraft.

23. A remote pilot system, such as in claim 1, in which the:

a) remote pilot can command an in-flight operational aircraft to be put on autopilot.

b) commanded aircraft will retain the last remote pilot's command, memorize it and stay on the remote pilot's designated trajectory until it receives another remote pilot command to alter the designated trajectory.

c) remote pilot can concurrently and/or consecutively command a plurality of aircraft to varying trajectories by putting each unique ID aircraft, in the plurality of aircrafts, on autopilot.

d) remote pilot can individually take control of a unique ID operational aircraft (a) that is on autopilot, while the other aircrafts (c) remain on autopilot, and then assume the piloting function of that unique operational aircraft (a) in order to land it.

e) remote pilot can individually and sequentially repeat the landing process (d) for each unique ID operational aircraft, in the plurality of operational aircraft (c), until each unique ID aircraft has been landed.

24. A remote pilot system, such as in claim 1, in which the:

a) **remote pilot simulator has a simulation of the aircrafts' Mode Control Panel/Flight Control Unit and Control Display Unit to transfer data to Autopilot/Flight Director(FD), Autothrottle, etc.**

b) **remote pilot simulator that electronically assimilates the Target State (TS) Report and Trajectory Change (TC) for transfer to the ATC/M.**

c) **remote pilot simulator electronically transfers the Minimum Aviation System Performance Standards for Automatic Dependent Surveillance Broadcast (ADS-B), June 25, 2002, RTCA/DO-242-A to ATC/M for maintaining safety of flight and control of the airspace.**

25. **A remote pilot system, such as in claim 1, in which the simulator provides a dual piloting control function for aircrafts 1 such that the simulator can be manned and controlled by either a remote pilot and/or remote copilot.**

26. **A remote pilot system, such as in claim 1, or supplemented with a secure communication system as in claim 14, where in order to save communication system bandwidth, an operational aircraft only transmits its unique aircraft identification (ID) and performance and control sensor data to a central ground-based processing station and ultimately to the remote pilot simulator when enabled by notification by the onboard pilot to the remote pilot to assume the piloting function of the aircraft, via aircraft to ground telecommunication, as in claim 4 or 5, or when the remote pilot notifies the onboard pilot that the aircraft is being put under control of the remote pilot via the telecommunication to the aircraft as in claim 6.**

27. **A remote pilot system, such as in claim 1 in which there are a plurality of remote pilot simulators capable of concurrently taking over the piloting of a specific number of operational aircraft.**

28. **A remote pilot system, such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft is designed or modified to have only one pilot seat.**

29. **A remote pilot system, such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft is designed or modified to have only one set of pilot control avionics.**

30. **A remote pilot system such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft displays and controls are reduced from a dual pilot system to one set of pilot displays and controls.**

31. **A remote pilot system, such as in claim 1, supplemented with a remote pilot command via telemetry to a specified stationary aircraft sitting on an airport tarmac that effectively shuts down and/or prevents an aircraft's engines from being turned on in order to prevent the aircraft from being moved.**

32. **A remote pilot system, such as in claim 28, where the remote pilot effectively shuts down and/or prevents an aircraft's engines from being turned on for a plurality of aircraft at an airport and/or airports.**

33. **A remote pilot system, such as in claim 1, where for security purposes in order to operate the high fidelity virtual reality simulator, the remote pilot must enter a unique pilot's identification code via a keyboard.**

34. **A remote pilot system, such as in claim 1, where for security purposes in order to operate the high fidelity virtual reality simulator, the simulator must recognize an authorized pilot's unique fingerprint, and/or voice print and/or facial characteristics and/or eye characteristics.**

35. **A remote pilot system, such as in claim 1, where for security purposes the high fidelity virtual reality simulator is located in a high security site that limits access to only authorized personnel.**

36. **A remote pilot system, such as in claim 1, where for security purposes the cipher code of claim 14, utilized for two-way communication, ground to aircraft and aircraft to ground, can be periodically altered by the remote pilot.**

37. **A remote pilot system, such as in claim 1, where a pre-flight check out mode is installed such that the onboard pilot can assure that the remote piloting**

mode is operational and functional by checking the aircraft's response to commands.

38. A remote pilot system, such as in claim 1, where an in-flight check out mode is installed such that the onboard pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.

39. A remote pilot system, such as in claim 1, where a pre-flight check out mode is installed such that the remote pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.

40. A remote pilot system, such as in claim 1, where an in-flight check out mode is installed such that the remote pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.

41. A remote pilot system, such as in claim 1, where in order to save RF bandwidth, the aircraft(s) performance and control parameters necessary for remote control of aircraft(s) that get continuously transmitted to the ground, are limited to only the performance and control parameters (e.g.: 3-d position and attitude) required by ATC/M to track the aircraft's trajectory until either the onboard pilot notifies the remote pilot of the onboard pilot's desire for the remote pilot to assume the piloting function of the aircraft, or the remote pilot notifies the onboard pilot that the remote pilot will be assuming the piloting function of the aircraft, or the onboard pilot notifies ATC/M of an emergency aboard the aircraft.

WHAT IS CLAIMED

1. **(Original) A remote piloting system comprising:**
   a) **an operational aircraft or a plurality of operational aircraft with equipment to interface with a ground-based aircraft simulator.**
   b) **a ground-based aircraft simulator or a plurality of ground-based simulators, that dynamically mimics the displays and controls of operational aircraft (a) as well as having the ability to remotely take over the piloting function of operational aircraft (a).**
   c) **a sensor multiplexer receiver and transmitter means located onboard aircraft (a) for accepting said aircraft performance and control parameters that are required by a ground based simulator to replicate the major control and performance states of aircraft (a), and then, when necessary, convert said performance and control parameters into digital format, add a unique aircraft identification, ID, and configuration label to an outgoing radio frequency, RF, signal and broadcasting said outgoing RF signal to a Central Ground-Based processing Station (CGBS) which then transfers the aircraft performance and control data to a ground-based aircraft simulator (b).**
   d) **a ground-based aircraft simulator digital processor/computer that provides the computational and conversion capability to dynamically reproduce displays in operational aircraft (a) as well to convert the remote piloting controls of the ground-based simulator so that they can be used for conning/guiding of operational aircraft (a).**
   e) **a remote pilot capability that permits a pilot sitting in the ground-based aircraft simulator (b) to control the piloting of an operational aircraft in (a).**
   f) **a ground-based aircraft simulator Flight Control Unit (FCU), and/or any combination of the following:**
      1. **ILS**
      2. **Autopilot/Flight Director (FD)**

3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to a safe landing and stopped by the remote pilot.

g) **a remote pilot electronic interface unit located on aircraft (a) that recognizes that the remote pilot aircraft simulator (b) has uniquely specified and selected it, from a plurality of operational aircraft, based on it recognizing its unique ID, as the vehicle to be remotely piloted.**

h) **a remote pilot electronic interface unit (g) that provides the interfaces to control the aircraft's (a) FCU and/or any combination of the following:**

1. **ILS**
2. **Autopilot/ Flight Director (FD)**
3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to a safe landing and stopped by the remote pilot.

i) **a ground-based aircraft simulator (b) that via ground to air telemetry, directed through the CGBS, with operational aircraft (a) and electronic interfaces (g) and (h) provides the electronic signals that control operational aircraft's (a) FCU and/or any combination of the following:**

1. **ILS**
2. **Autopilot/ Flight Director (FD)**
3. **Autothrottle**
4. **Autobrake**
5. **Thrust Control**
6. **Steering Control**
7. **Landing-gear Control**

so that aircraft (a) can be brought to safe landing at a remote pilot designated airfield and stopped..

j) **a unique aircraft identification, ID, and configuration system which permits two-way RF communication between a ground-based aircraft simulator and a specific operational aircraft (a) that is functioning among a plurality of operational aircraft.**

k) **a parsing system in the CGBS based on aircraft's (a) unique ID (j) that allows information going to the CGBS to be parsed so that aircraft (a) is uniquely identified from a plurality of operational aircraft and utilized in the remote pilot simulator (b).**

l) **a ground to air and air to ground two-way RF communication system that allows unique communication between specified operational aircraft (a) and a ground-based aircraft simulator (b) based on the unique ID (j) of operational aircraft (a).**

2. **(Original) A remote pilot system, such as in claim 1, in which:**

   a) **a ground-based simulator has voice and /or digital data communication with the air traffic control/management (ATC/M).**

3. **(Original) A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the:**

a) **operational aircraft onboard pilot notifies, via telecommunication, the remote pilot located in the ground-based simulator, of the onboard pilot's desire for the remote pilot to assume the piloting function of the operational aircraft.**

b) **the remote pilot located in a ground-based simulator notifies, via telecommunication, the operational aircraft onboard pilot that the remote pilot has taken the piloting function over and that the operational aircraft piloting function is now under the control of the remote pilot.**

c) **remote pilot in the ground-based simulator notifies, via telecommunication, the onboard pilot in the operational aircraft that the piloting function of the operational aircraft will be delegated back to the onboard pilot at a designated time.**

d) **operational aircraft onboard pilot notifies, via telecommunications, the remote pilot in the ground-based simulator of the onboard pilot's desire to assume the piloting function of the operational aircraft.**

4. **(Original) A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the operational aircraft onboard pilot using a coded message for a terrorist, notifies via telecommunication, the remote pilot located in the ground-based simulator to immediately assume the piloting function of the operational aircraft.**

5. **(Original) A remote pilot system, such as in claim 1, equipped with an aircraft display & control advisory system located onboard the operational aircraft in which the operational aircraft onboard pilot using a coded message for a dire aircraft problem, notifies via telecommunication, the remote pilot located in the ground-based simulator to immediately assume the piloting function of the operational aircraft.**

6. **(Original) A remote pilot system, such as in claim 1, equipped with a remote pilot display & control advisory system located in the remote pilot simulator in which the:**

a) **operational aircraft onboard pilot notifies the remote pilot in the ground-based simulator , via telecommunication, of the onboard pilot's desire for the remote pilot to assume the piloting function of the operational aircraft.**

b) **remote pilot in the ground-based, via telecommunication, notifies the operational aircraft onboard pilot that the remote pilot has taken the piloting function over and that the operational aircraft piloting is now under the control of the remote pilot.**

c) **remote pilot in the ground-based simulator notifies, via telecommunication, the operational aircraft onboard pilot that the piloting function of the operational aircraft will be delegated back to the onboard pilot at a specified time.**

d) **operational aircraft onboard pilot notifies, via telecommunications, the remote pilot in the ground-based simulator of the onboard pilot's desire to assume the piloting function of the operational aircraft.**

7. **(Original) A remote pilot system, such as in claim 1, in which an air traffic control/management (ATC/M), weather, map, terrain, security and airline communication system that allows the remote pilot's simulator to reproduce the communication, data and displays available in the operational aircraft 1.**

8. **(Original) A remote pilot system, such as in claim 1, in which the remote pilot in the simulator has the ability to communicate directly via a ground-based digital data link with ATC/M, a weather source, a map source, a terrain source, security, airline and aircraft manufacturer.**

9. **(Original) A remote pilot system, such as in claim 1, in which the RF digital two-way (to and from) communication system between the remote pilot and the operational aircraft is a regional digital data link (less than 1000 miles).**

10. **(Original) A remote pilot system, such as in claim 1, in which the:**

a) **RF digital two-way (to and from) communication system between the remote pilot and the operational aircraft is a nationwide digital data link.**

b) **communication system (a) with a minimum of a 500 mile extension beyond national borders.**

11. **(Original) A remote pilot system, such as in claim 1, in which the:**

a) **RF digital two-way (to/from) communication system between the remote pilot and the operational aircraft is a global digital data link.**

b) **communication system consists of an in atmosphere RF communication, such as via a global satellite data link or ground to aircraft directly, or a combination of atmospheric RF communication and a ground digital data link consisting of optical fiber and wire digital data transmission.**

12. **(Original) A remote pilot system, such as in claim 1, in which the ground-based remote pilot simulator for emergency mitigation, development and training purposes interfaces directly with the operational aircraft (a) and/or an air carrier or aircraft manufacturer's simulation capability such that it artificially produces a computer generated aircraft piloting environment**

13. **(Original) A remote pilot system, such as in claim 1, in which the ground to air RF communication system allows simultaneous communication of emergency or warning messages from the remote pilot simulator to all operational aircraft.**

14. **(Original) A remote pilot system, such as in claim 1, in which both the RF communication and the ground communication are secure and can have either one of, or any combinations of:**

a) **a ciphered communication system that allows for periodically changing the code to be utilized in the communication system.**

b) **an anti-spoof communication system that reasonably prevents data from being misinterpreted..**

c) **an anti-jam communication system that reasonably prevents the data communication from being intentionally jammed or jammed by naturally occurring RF noise/interference signals.**

15. **(Original) A remote pilot system, such as in claim 1, supplemented with:**

a) **a remote pilot simulator that simulates the control of the aircraft's control surfaces (ailerons, flaps, spoilers, rudder, etc.), thrust controls, landing-gear controls, steering, braking controls, etc. so as to permit the remote pilot, via telemetry to the aircraft, to take manual control of the aircraft just as if the remote pilot was the onboard pilot.**

b) **an operational aircraft interface which includes control surfaces (ailerons, flaps, spoilers, rudder, etc.), thrust controls, landing-gear controls, steering, braking controls, etc., that permits the signals coming from the remote pilot, via telemetry to the aircraft, to be manually controlled by the remote pilot both on the ground for taxiing as well as during flight.**

16. **(Original) A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display for adding virtual reality capability to the remote pilot simulator.**

17. **(Original) A high fidelity synthetic vision remote pilot simulator windshield display that utilizes digitized map, terrain and elevation – topographic - data and airport data to aid the remote pilot in safely landing the aircraft.**

18. **(Original) A high fidelity synthetic vision remote pilot simulator windshield display that superimposes airport ground traffic and/or air traffic on the simulator's windshield display from the local airport's traffic control system's real-time data system.**

19. **(Currently Amended) A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display supplemented with dynamic representations of surrounding ground and in air vehicles that are superimposed on the display based on ATC/M supplied digital data such that it permits the remote pilot in the simulator to reasonably see the aircraft's**

environment similar to the onboard pilot in the actual aircraft which is/will-be remotely controlled.

20. (Currently Amended) A high fidelity synthetic vision remote pilot simulator windshield display or windshield wrap-around display supplemented with dynamic representations of surrounding ground and in-air vehicles that are superimposed on the display based on topographic and airport digital data, from a data base, such that the remote pilot in the simulator sees the aircraft environment similar to the pilot in the actual aircraft which is/will-be remotely controlled.

21. (Original) High fidelity synthetic vision remote pilot virtual reality goggles/glasses that superimpose the ATC/M supplied digital data such that the remote pilot reasonably sees the aircraft environment similar to the onboard pilot in the actual aircraft which is/will-be remotely controlled.

22. (Original) High fidelity synthetic vision remote pilot virtual reality goggles/glasses that superimposes topographic and airport digital data, from a digital data base, such that the remote pilot in the simulator sees the aircraft environment similar to the pilot residing in the actual aircraft.

23. (Original) A remote pilot system, such as in claim 1, in which the:

- **a) remote pilot can command an in-flight operational aircraft to be put on autopilot.**
- **b) commanded aircraft will retain the last remote pilot's command, memorize it and stay on the remote pilot's designated trajectory until it receives another remote pilot command to alter the designated trajectory.**
- **c) remote pilot can concurrently and/or consecutively command a plurality of aircraft to varying trajectories by putting each unique ID aircraft, in the plurality of aircrafts, on autopilot.**
- **d) remote pilot can individually take control of a unique ID operational aircraft (a) that is on autopilot, while the other aircrafts (c) remain on autopilot, and then assume the piloting function of that unique operational aircraft (a) in order to land it.**

e) **remote pilot can individually and sequentially repeat the landing process (d) for each unique ID operational aircraft, in the plurality of operational aircraft (c), until each unique ID aircraft has been landed.**

24. **(Original) A remote pilot system, such as in claim 1, in which the:**

a) **remote pilot simulator has a simulation of the aircrafts' Mode Control Panel/Flight Control Unit and Control Display Unit to transfer data to Autopilot/Flight Director(FD), Autothrottle, etc.**

b) **remote pilot simulator that electronically assimilates the Target State (TS) Report and Trajectory Change (TC) for transfer to the ATC/M.**

c) **remote pilot simulator electronically transfers the Minimum Aviation System Performance Standards for Automatic Dependent Surveillance Broadcast (ADS-B), June 25, 2002, RTCA/DO-242-A to ATC/M for maintaining safety of flight and control of the airspace.**

25. **(Original) A remote pilot system, such as in claim 1, in which the simulator provides a dual piloting control function for aircrafts 1 such that the simulator can be manned and controlled by either a remote pilot and/or remote copilot.**

26. **(Original) A remote pilot system, such as in claim 1, or supplemented with a secure communication system as in claim 14, where in order to save communication system bandwidth, an operational aircraft only transmits its unique aircraft identification (ID) and performance and control sensor data to a central ground-based processing station and ultimately to the remote pilot simulator when enabled by notification by the onboard pilot to the remote pilot to assume the piloting function of the aircraft, via aircraft to ground telecommunication, as in claim 4 or 5, or when the remote pilot notifies the onboard pilot that the aircraft is being put under control of the remote pilot via the telecommunication to the aircraft as in claim 6.**

27. **(Original) A remote pilot system, such as in claim 1 in which there are a plurality of remote pilot simulators capable of concurrently taking over the piloting of a specific number of operational aircraft.**

28. (Original) A remote pilot system, such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft is designed or modified to have only one pilot seat.

29. (Original) A remote pilot system, such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft is designed or modified to have only one set of pilot control avionics.

30. (Original) A remote pilot system such as in claim 1, for Executive (small to medium sized) Aircraft, Passenger/Carrier Aircraft, Cargo Aircraft and large Military Aircraft, in which the operational aircraft displays and controls are reduced from a dual pilot system to one set of pilot displays and controls.

31. (Original) A remote pilot system, such as in claim 1, supplemented with a remote pilot command via telemetry to a specified stationary aircraft sitting on an airport tarmac that effectively shuts down and/or prevents an aircraft's engines from being turned on in order to prevent the aircraft from being moved.

32. (Original) A remote pilot system, such as in claim 28, where the remote pilot effectively shuts down and/or prevents an aircraft's engines from being turned on for a plurality of aircraft at an airport and/or airports.

33. (Original) A remote pilot system, such as in claim 1, where for security purposes in order to operate the high fidelity virtual reality simulator, the remote pilot must enter a unique pilot's identification code via a keyboard.

34. (Original) A remote pilot system, such as in claim 1, where for security purposes in order to operate the high fidelity virtual reality simulator, the simulator must recognize an authorized pilot's unique fingerprint, and/or voice print and/or facial characteristics and/or eye characteristics.

35. **(Original) A remote pilot system, such as in claim 1, where for security purposes the high fidelity virtual reality simulator is located in a high security site that limits access to only authorized personnel.**

36. **(Original) A remote pilot system, such as in claim 1, where for security purposes the cipher code of claim 14, utilized for two-way communication, ground to aircraft and aircraft to ground, can be periodically altered by the remote pilot.**

37. **(Original) A remote pilot system, such as in claim 1, where a pre-flight check out mode is installed such that the onboard pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.**

38. **(Original) A remote pilot system, such as in claim 1, where an in-flight check out mode is installed such that the onboard pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.**

39. **(Original) A remote pilot system, such as in claim 1, where a pre-flight check out mode is installed such that the remote pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.**

40. **(Original) A remote pilot system, such as in claim 1, where an in-flight check out mode is installed such that the remote pilot can assure that the remote piloting mode is operational and functional by checking the aircraft's response to commands.**

41. **(Original) A remote pilot system, such as in claim 1, where in order to save RF bandwidth, the aircraft(s) performance and control parameters necessary for remote control of aircraft(s) that get continuously transmitted to the ground, are limited to only the performance and control parameters (e.g.: 3-d position and attitude) required by ATC/M to track the aircraft's trajectory until either the onboard pilot notifies the remote pilot of the onboard pilot's desire for the remote pilot to assume the piloting function of the aircraft, or the remote pilot**

notifies the onboard pilot that the remote pilot will be assuming the piloting function of the aircraft, or the onboard pilot notifies ATC/M of an emergency aboard the aircraft.